

A circular stamp with the text "OIPE" at the top, "JC101" at the bottom, "MAY 19 2005" in the center, and "IN THE" at the bottom. The stamp is surrounded by a decorative border.

091626,566

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Certificate

MAY 24 2005

of Correction

In re application : Qingping Jiang, et al. MAY 24 2005
Patent No. : 6,783,948
Issued : August 31, 2004 of Correction
For : CHEMILUMINESCENT ACRIDINIUM COMPOUNDS
AND ANALOGUES THEREOF AS SUBSTRATES OF
HYDROLYTIC ENZYMES
Attorney's Docket : CCDLT-300XX

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: ATTN: Certificates of Correction Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 17, 2005.

By: Holliday C. Heine
Holliday C. Heine, Ph.D.
Registration No. 34,346
Attorney of Record

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
ATTN: Certificates of Correction

Siri:

Enclosed are two completed copies of Form PTO 1050. It is requested that a Certificate of Correction be issued, pursuant to 37 C.F.R. § 1.323, to correct an inadvertent clerical mistake that arose, in good faith, during the prosecution of the above-identified patent.

05/20/2005 AWONDAF1 00000009 6783948

01 FC:1811

100.00 0P

-1-

WEINGARTEN, SCHURGIN,
GAGNEBIN & LEBOVICI, LLP
TEL. (617) 542-2290
FAX. (617) 451-0313

Enclosed herewith is our check in the amount of \$100.00 as payment of the fee for the above-referenced correction. In the event any additional fee is required, please charge such amount to Patent and Trademark Office Deposit Account No. 23-0804. Triplicate copies of this letter are enclosed.

Respectfully submitted,

QINGPING JIANG, ET AL.

By: Holliday C. Heine
Holliday C. Heine, Ph.D.
Registration No. 34,346
Attorney of Record

WEINGARTEN, SCHURGIN,
GAGNEBIN & LEBOVICI LLP
Ten Post Office Square
Boston, Massachusetts 02109
Telephone: (617) 542-2290
Telecopier: (617) 451-0313

HCH/doc
Enclosures

321468

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

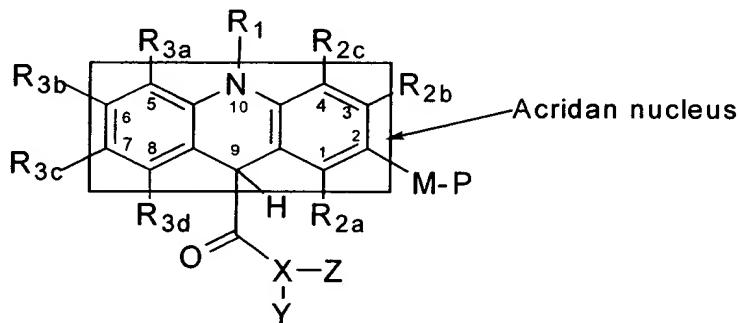
It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Front page, (57) Abstract, line 16, "it a" should read --is a--;

Column 3, line 13, "can are" should read --can be--;

Column 3, line 20, "Sasamoto at al" should read --Sasamoto et al--;

Column 15, lines 17-30, delete "Formula IV (including structure)" and insert the following Formula IV:



Formula IV

Column 15, line 34, "m group" should read --group--;

MAILING ADDRESS OF SENDER:

Weingarten, Schurigin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

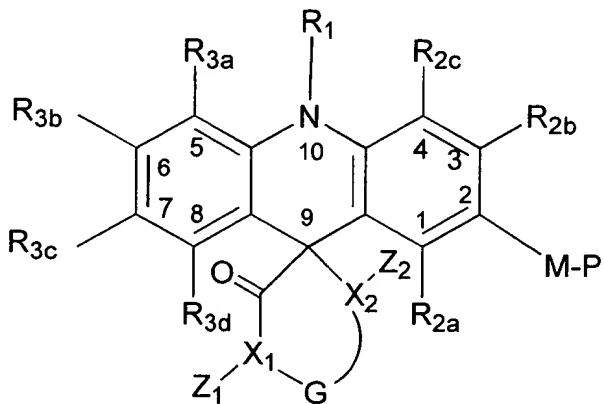
Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 15, lines 42-55, delete "Formula V (including structure)" and insert the following Formula V:



Formula V

MAILING ADDRESS OF SENDER:

Weingarten, Schurigin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

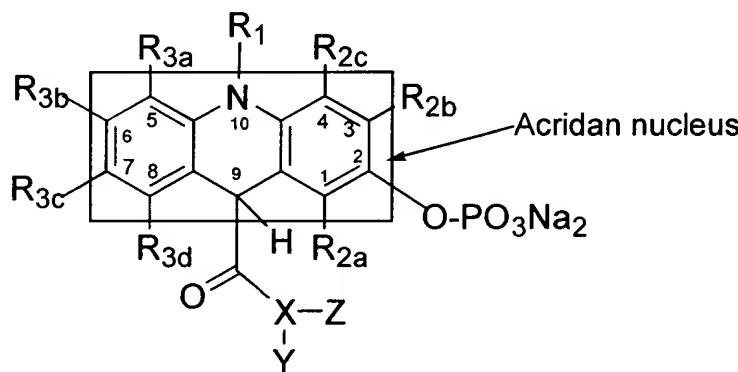
Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 16, lines 54-65, delete "Formula VIII (including structure)" and insert the following Formula VIII:



Formula VIII

MAILING ADDRESS OF SENDER:

Weingarten, Schurigin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

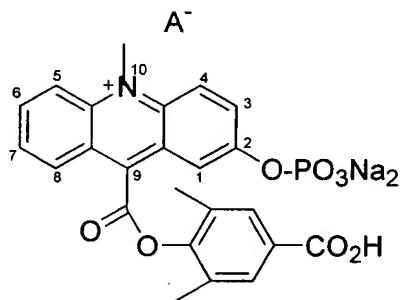
Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 17, lines 36-50, delete "1 (including structure)" and insert the following 1:



1

MAILING ADDRESS OF SENDER:

Weingarten, Schurgin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

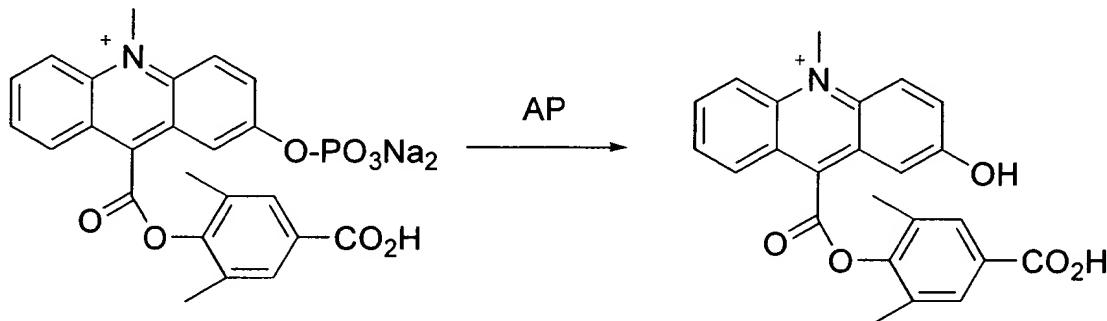
UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 18, lines 5-34, delete "Reaction B (including structures)" and insert the following Reaction B:

Reaction B



MAILING ADDRESS OF SENDER:

Weingarten, Schurigin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 20, line 63, "enzyme is the" should read --enzyme in the--;

Column 22, line 59, "fulfil this" should read --fulfill this--;

Column 29, line 46, "[Krika, Clin." should read --[Kricka, Clin.--;

Column 36, line 46, "TAF/acetonitrile" should read
--TFA/acetonitrile--;

Column 36, line 50, "(DALTI-TOF) :" should read --(MALDI-TOF) :--;

Column 38, line 31, "TAF/" should read --TFA/--;

Column 38, line 45, "(2-Phos-NSB-DNM, 7)" should read
--(2-Phos-NSB-DMAE, 7)--;

Column 42, line 60, "10 m)." should read --10 μ m).--;

Column 45, line 61, insert the following prior to
N-(4'-Benzyl)phenylisatin:

-- Example 10

Synthesis of 2-OH-Spiroacridan (12) and 2-Phos-Spiroacridan
(11)

MAILING ADDRESS OF SENDER:

Weingarten, Schurgin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

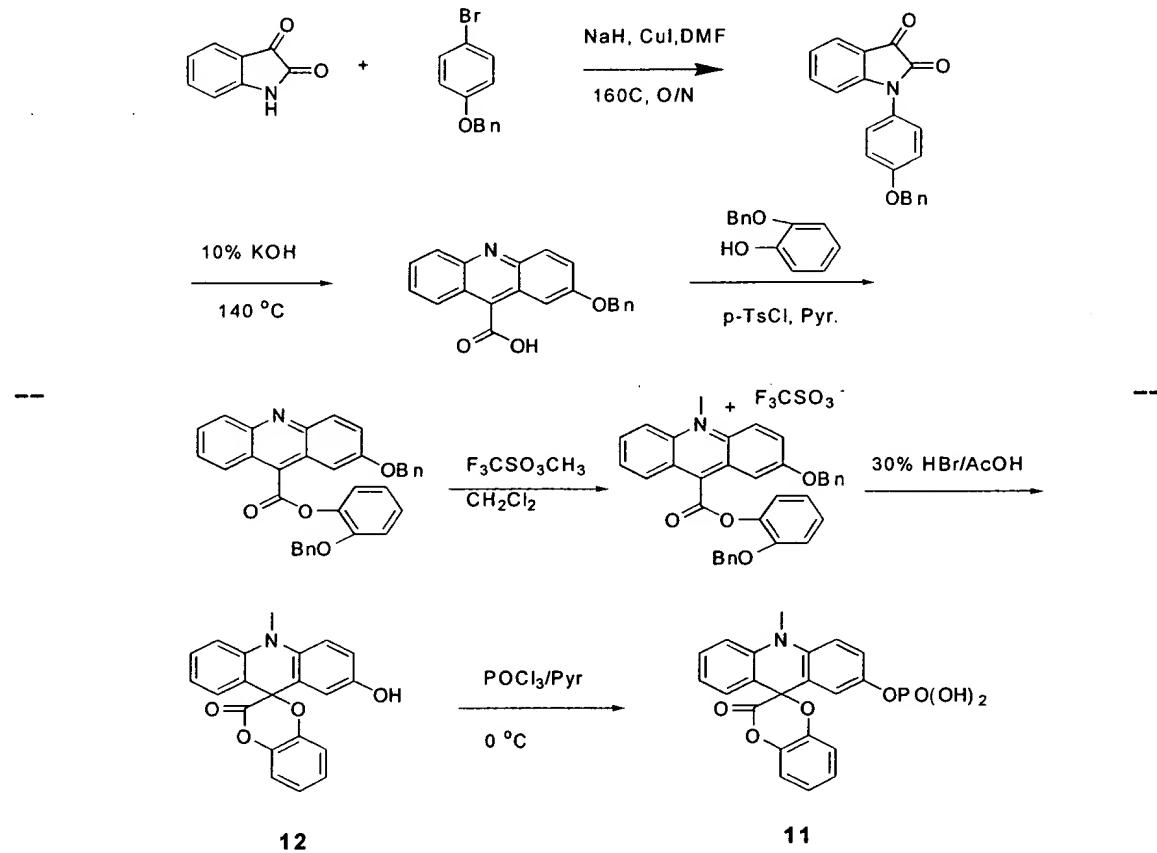
No. of additional copies
 0
 ⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
DATED : August 31, 2004
INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:



MAILING ADDRESS OF SENDER:

PATENT NO. 6,783,948

Weingarten, Schurgin, Gagnebin & Lebovici LLP
Ten Post Office Square
Boston, Massachusetts 02109

No. of additional copies
0
⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
DATED : August 31, 2004
INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 46, line 54, "10 μ n)." should read --10 μ m).--;

Column 46, line 61, "(M+~1)." should read --(M+1).--;

Columns 47-50, after the paragraph following Example 11, delete formulas 13 and 15 and insert the following formulas 13 and 15:

MAILING ADDRESS OF SENDER:

Weingarten, Schurgin, Gagnebin & Lebovici LLP
Ten Post Office Square
Boston, Massachusetts 02109

PATENT NO. 6,783,948

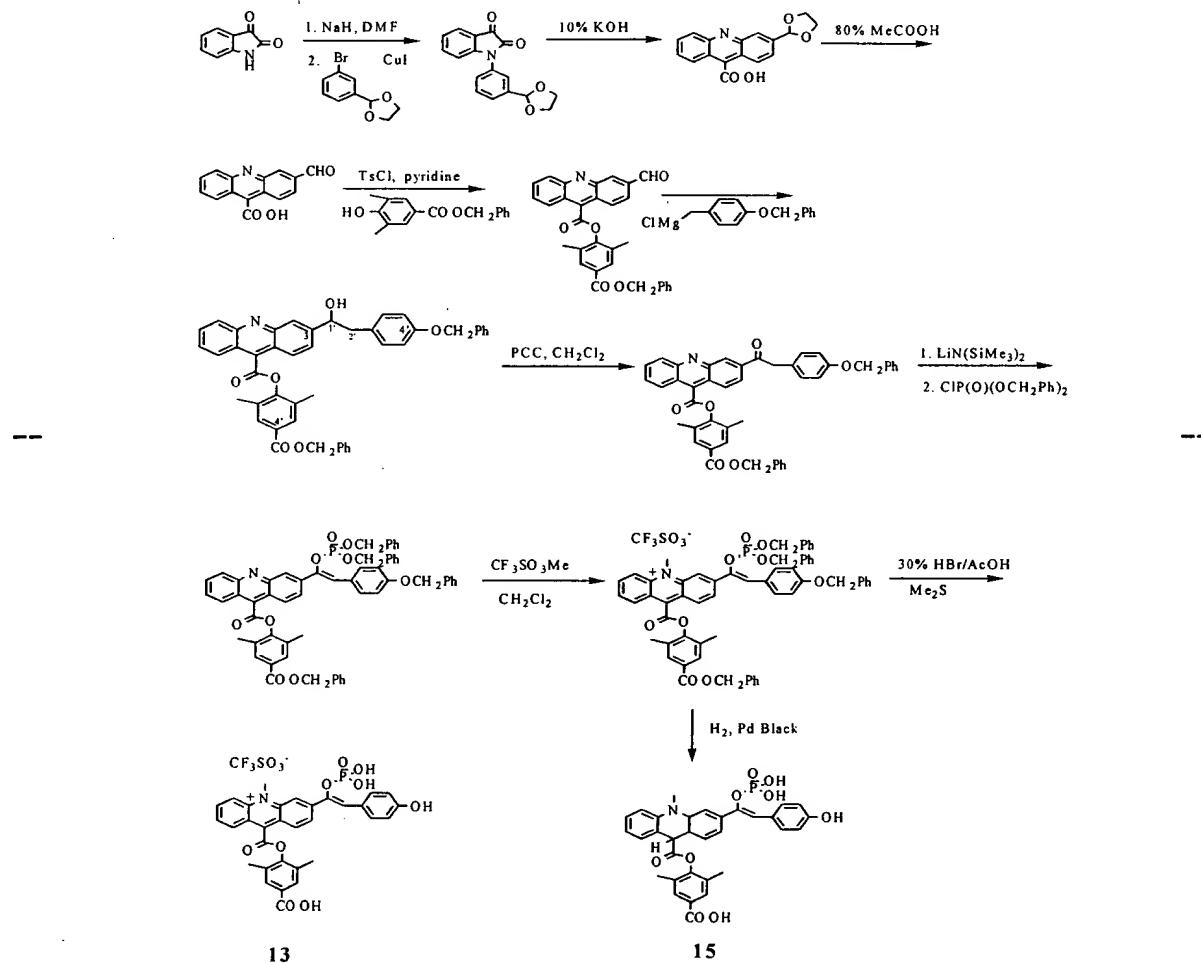
No. of additional copies
0
⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
DATED : August 31, 2004
INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:



MAILING ADDRESS OF SENDER:

PATENT NO. 6,783,948

Weingarten, Schurgin, Gagnebin & Lebovici LLP
Ten Post Office Square
Boston, Massachusetts 02109

No. of additional copies
→ 0

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 51, line 53, "phosphite" should read --phosphate--;

Column 57, line 18, "2-Phos-DMM" should read --2-Phos-DMAE--;

Column 60, line 50, "TSH concentration. SH" should read
 --TSH concentration. TSH--;

Column 61, lines 44-62, delete "claim 3" and insert the following
 claim 3:

--3. The chemiluminescent substrate of claim 1, wherein
 P is PO_3B ;
 X is O; Y is selected from the group consisting of phenyl,
 (2',6'-dimethyl-4'-benzyloxycarbonyl)phenyl and (2',6'-dimethyl-4'-
 carboxyl)phenyl; and Z is omitted.--

Column 62, claim 8, line 48, "structures," should read
 --structure--;

Column 63, claim 11, line 53, "K2, Ca" should read --K₂, Ca--;

MAILING ADDRESS OF SENDER:

Weingarten, Schurgin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

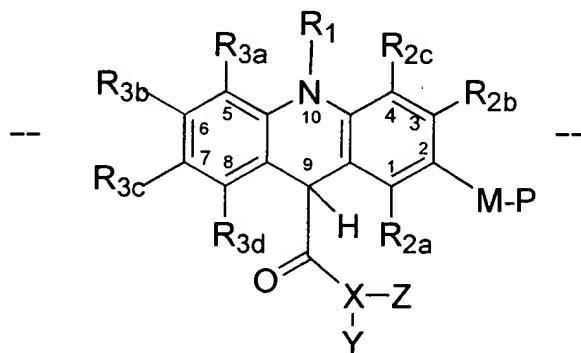
Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 66, claim 17, lines 46-59, delete the structure and insert the following structure:



MAILING ADDRESS OF SENDER:

Weingarten, Schurgin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

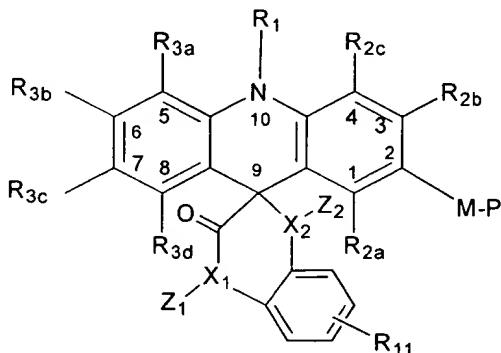
UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 67-68, claim 18, delete "claim 18" and insert the following claim 18:

--18. A chemiluminescent substrate of a hydrolytic enzyme, said substrate having the structure



wherein

P is selected from the group consisting of PO_3H_2 , PO_3K_2 , $\text{PO}_3(\text{NH}_4)_2$, PO_3Ca , PO_3Mg , PO_3Na_2 , a sugar moiety and $\text{C}(\text{=O})\text{R}$ group wherein R is an alkyl group having 1 to 6 carbon atoms;

M is oxygen;

MAILING ADDRESS OF SENDER:

Weingarten, Schurigin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,783,948
 DATED : August 31, 2004
 INVENTOR(S) : Qingping Jiang, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

R_1 is selected from the group consisting of methyl, sulfopropyl, sulfobutyl, sulfoalkyl, and carboxymethyl;

R_{2a} , R_{2b} , R_{2c} , R_{3a} , R_{3b} , R_{3c} and R_{3d} , can be the same or different, selected from a group consisting of hydrogen, methyl, methoxy, halides, cyano (-CN);

A^- is a counter ion for the electroneutrality of the quaternary nitrogen of the acridinium compounds, said A^- not being present if said R_1 substituent contains a strongly ionizable group that can form an anion and pair with the quaternary ammonium cationic moiety; and

X_1 and X_2 are the same or different and are selected from the group consisting of O, N or S, such that,

when X_1 and X_2 are O or S, R_{11} is selected from the group consisting of hydrogen, -R, substituted or unsubstituted aryl, halides, nitro, sulfonate, sulfate, phosphonate, $-CO_2H$, $-C(O)OR$, cyano (-CN), -SCN, -OR, -SR, -SSR, $-C(O)R$, $-C(O)NHR$, ethylene glycol, or polyethylene glycol, where R is as defined above; and

Z_1 and Z_2 are omitted; and

when at least one of X_1 and X_2 is N, Z_1 and Z_2 are toluenesulfonyl, and R_{11} is carboxypropyl.--

MAILING ADDRESS OF SENDER:

Weingarten, Schurigin, Gagnebin & Lebovici LLP
 Ten Post Office Square
 Boston, Massachusetts 02109

PATENT NO. 6,783,948

No. of additional copies
 0
 ⇒

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22323-1450.